

Clinicopathological Study of Lichen Planus in a Tertiary Care Center

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Abstract

Background: Lichen planus (LP) is an idiopathic papulosquamous disease of the skin and mucous membranes. The classical lesions are violaceous, flat-topped polygonal papules associated with intense itching. It is worldwide in distribution with a variable incidence between 0.14% and 0.80%.

Aims: The objective of the study was to find out the clinicopathological profile of LP cases seen among patients attending the dermatology out-patient department in a tertiary care center.

Materials and Methods: A total of 90 patients were clinically diagnosed as LP during the study period. A detailed clinical history was elicited, and clinical examination was done for all the patients, and the findings were meticulously recorded. Relevant lab investigations and skin biopsy of the lesional sites were done.

Results: LP constituted 0.16% of the total patients diagnosed during the period of study. 51% of patients were between 31 and 50 years of age. Papules were present in 79%, and plaques were present in 14% of the patients. 21% of patients had oral mucosal involvement, and nail involvement was seen in 17%. The diseases, which were found to be associated with LP, were diabetes mellitus, hypertension, hypothyroidism, vitiligo, and alopecia areata. The malignant change was observed in a case of long-standing hypertrophic LP.

Conclusion: In our study, the majority of patients fall in the 31-50 years age group. Various studies show that childhood involvement is uncommon. In our study, childhood LP accounted for about 9% of cases. There was a complete correlation between clinical types and histopathological features in all the patients.

Key words: Lichen planus, Papulosquamous, Violaceous

INTRODUCTION

Lichen planus (LP) is an idiopathic papulosquamous disease of the skin, mucous membranes, and nails. The exact incidence and prevalence of LP are unknown, but the overall prevalence is believed to be less than 1% of the general population.¹ LP commonly affects middle-aged adults though any age can be affected. About 2/3rd cases occur between 30 and 60 years of age.² A slight female preponderance has been reported. Males have an earlier age of onset (4th decade) than females (5th decade). No

racial predilection has been noted. Exact etiology is not known. It is considered to be due to the cell-mediated immune response to an epidermal antigen in genetically predisposed persons.³ Infections, drugs, dental amalgam materials, and stress are known to be triggering factors. The classical lesions of cutaneous LP are violaceous, polygonal flat-topped papules and plaques associated with intense itching. The sites of predilection are flexor surface of wrists, trunk, and thighs. Lesions can appear along sites of trauma. This is known as Koebner's phenomenon. This study was done to document and analyze the clinicopathological profile of LP in Indian population.

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MATERIALS AND METHODS

The study was conducted in the Department of Dermatology, Government Rajaji Hospital, Madurai, Tamil Nadu, India. A total of 90 patients clinically

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diagnosed as LP during a study period of one year were taken for the study. A detailed clinical history, including duration, site of onset, symptoms, drug history, and family history, was elicited. A complete general examination, systemic examination, and dermatological examination were made. Digital photographs were taken. The morphology and distribution of skin lesions, presence of any other associated diseases were noted. The concomitant affection of mucosa, hair, nails, palms, soles, and genital involvement was recorded. Laboratory investigations such as urine examination, blood sugar, liver function tests, blood venereal disease research laboratory, and complete hemogram were done. Skin biopsy was done in all the patients after obtaining informed consent. Sections stained with hematoxylin and eosin was used to study the histological features of LP.

OBSERVATIONS AND RESULTS

The following observations were made from the study. Out of 90 cases of LP studied, 60 (66.66%) were of LP classical type. Other types of LP encountered were hypertrophic, eruptive, linear, annular, follicular, actinic, LP pigmentosus, lupus erythematosus (LE)/LP overlap, and isolated oral LP (Table 1). The majority of patients were in the age group of 31-50 years (Table 2).

About 46/90 patients were females and 44/90 were males (Table 3). The initial site of onset was limbs in 63% (Figure 1), trunk in 21%, face in 8%, oral mucosa in 6%, and genital mucosa in 2%. Papules were seen in 79%, and plaques were seen in 14% of the patients. Koebner's phenomenon was seen in 33% of the patients. The presenting symptoms of the patients were itching in 73% and pain in 7% and 20% were asymptomatic. Childhood LP was seen in 9% (8 patients). Oral mucosal involvement was noted in 19 patients. Reticular, plaque type, and erosive patterns were seen in oral lesions of 11, 5, and 3 patients, respectively. Genital lesions were observed in 9 male patients (10%). Nail changes were seen in 16 patients (18%). Pterygium was found in 3 of the patients. Other nail changes noted were longitudinal ridging, onychomadesis, trachyonychia, nail plate thinning, longitudinal melanonychia, onychoschizia, and punctate leukonychia. Palmoplantar lesions were associated in 20% of cases. Mucosal and palmoplantar involvement were not seen in children. The diseases which were found in the association were diabetes mellitus in 6 patients (6.6%), hypertension in 2 patients, and hypothyroidism in 2 patients. Vitiligo was seen in a patient and alopecia areata was observed in a patient. Squamous cell carcinoma was found in a case of long-standing hypertrophic LP.

Table 1: Clinical types of LP

Clinical types of LP	Number of patients (%)
Classical	60 (66.66)
Hypertrophic	10 (11.11)
Linear	5 (5.55)
Eruptive	4 (4.44)
LP pigmentosus	3 (3.33)
Oral	2 (2.22)
Annular	2 (2.22)
Follicular	2 (2.22)
Actinic	1 (1.11)
LE/LP overlap	1 (1.11)

LP: Lichen planus, LE: Lupus erythematosus

Table 2: Age distribution

Age group in years	Number of patients (%)
0-10	6 (6.67)
11-20	8 (8.88)
21-30	16 (17.77)
31-40	24 (26.66)
41-50	22 (24.44)
51-60	10 (11.11)
61-70	4 (4.44)

Table 3: Sex distribution

Clinical type of LP	Number of male patients	Number of female patients
Classical	27	33
Eruptive	3	1
LP pigmentosus	1	2
Oral LP	-	2
Annular	2	-
Hypertrophic	7	3
Linear	3	2
Actinic	-	1
Follicular	1	1
LE/LP overlap	-	1

LP: Lichen planus, LE: Lupus erythematosus



Figure 1: Violaceous papules of lichen planus

Histopathological Features

All of the sections examined showed classical histopathological changes of LP. Epidermal changes were characterized by orthohyperkeratosis (seen in 84%), focal hypergranulosis (80%), irregular acanthosis (78%), toothing of rete ridges (78%), and basal cell liquefaction degeneration (100%). Epidermal thinning was observed in the case of LP actinicus. Hypertrophic LP had more marked hyperkeratosis and acanthosis and follicular plugging was present in lichen planopilaris.

Dermal changes were characterized by a band-like inflammatory infiltrate predominantly of lymphocytes intermingled with a few macrophages in the dermo-epidermal junction in most of the cases (Figure 2). In lichen planopilaris, perifollicular involvement was present. A prominent perivascular infiltrate was observed in the case of LE/LP overlap. Civatte bodies or necrotic keratinocytes were present in only 46% of cases in the lower epidermis and the papillary dermis. They were observed in large numbers in the case of actinic LP and LP pigmentosus. Pigment incontinence in the form of melanophages was seen in the superficial dermis in all the cases. Both linear LP and eruptive LP showed classical histological features.

Two cases of classical LP lesions showed parakeratosis and prominent eosinophilic infiltrate in addition to the lymphocytic infiltrate. Both had history of drug intake, one patient was taking captopril, another one was on chlorpromazine. A diagnosis of drug-induced LP was made based on the findings. Features of squamous cell carcinoma were seen in the biopsy of warty growth in a case of hypertrophic LP.

DISCUSSION

This study describes the clinical and histopathological characteristics of patients with LP. In our study, the majority

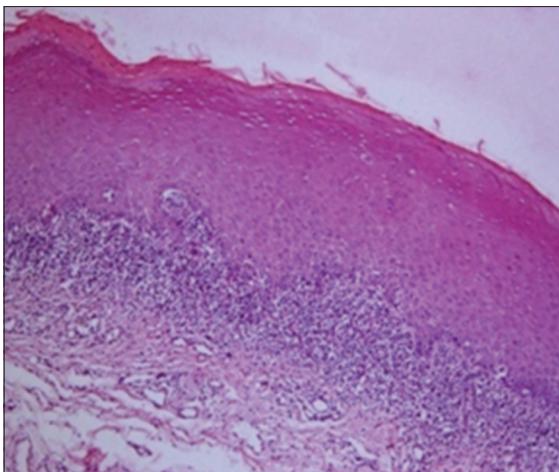


Figure 2: Band-like infiltrate on histopathology

of patients fall in the 31-50 years age group which is similar to studies done by Singh *et al.* and Bhattacharya *et al.*² We observed that classical LP was the most common, constituting 67% of total cases which is in concordance with the literature.² This was followed by hypertrophic type (11%), linear variant (5.5%), eruptive type (4%), and LP pigmentosus (3%). Oral LP was seen in 2%. Annular LP was present in 2% and lichen planopilaris was present in 2%. 1 patient had features of LE/LP overlap and 1 patient presented with actinic LP. Classical, linear, and eruptive types were seen in children. Linear variant, which is reported to be relatively rare, was the third common type in this study. In our study, we found that there was no predominant gender predilection. In the literature, there has been no consistency regarding any sexual predilection of LP, but most of the studies have shown that females are more commonly affected than males.⁴ In our study, we found that lower limbs (63%) were the most common site to be affected in classical LP (Figure 1). A similar observation has been reported in various studies, and venous stasis has been offered as a likely explanation.² Oral mucosal involvement was seen in the form of reticular pattern, plaques, or erosions in 21% of patients. The reticular type was the most prevalent and the buccal mucosa was the most common site affected, an observation supported by the literature. Palmoplantar lesions (20%) and nail changes (18%) were common. Association of other immune-mediated diseases was noted. Neoplastic transformation of LP is a rare event.⁵ In our patient with hypertrophic LP of 8 years duration, squamous cell carcinoma developed. Most of the characteristic histopathologic features of LP were observed in our study. The frequently seen features were orthohyperkeratosis, basal layer liquefaction degeneration, pigment incontinence, focal hypergranulosis, band-like infiltrate, and irregular acanthosis.

CONCLUSION

LP was seen mostly in patients in the 4th and 5th decades. Classical lesions were the most common followed by hypertrophic and linear variants in our study. Limbs were the most frequent site of onset. Association of other autoimmune diseases was noted. All the patients showed a complete correlation between clinical types and histopathological features.

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